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ST. ONGE STEWARD JOHNSTON & REENS, LLC 986 BEDFORD STREET STAMFORD, CT 06905-5619			SY, MARIANO ONG	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/816,448
Filing Date: April 01, 2004
Appellant(s): AUMULLER ET AL.

Attorney Todd M. Oberdick
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 20, 2006 appealing from the Office action mailed February 3, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

DE 19638226 C1	Blanz	2-1998
US 6,540,308	Hilberer	4-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Blanz (DE 19638226 C1) or under 35 U.S.C. 102(e) as being anticipated by Hilberer (US 6,540,308).

See Figures 1-2 of Blanz.

See Figures 1-3 of Hilberer.

These documents each show a well-known multi-circuit compressed air processing system disposed within a common housing.

(10) Response to Argument

- A. With respect to page 1 of the Appeal Brief “previously filed on March 3, 2006” should be --previously filed on February 3, 2006--.

Art Unit: 3683

B. With respect to page 6 of the Appeal Brief, Appellant argued that “Blanz (DE 19638226 C1) does not disclose, teach or suggest in any way that the various control components of the system (such as the recited valve arrangement) are disposed within a common housing, as is required by all claims as amended”. Blanz disclosed, as shown in fig. 1, valve 23” and brake valve 31 formed a valve arrangement. At least one valve 23” of the valve arrangement is within a common housing. The valve 23” together with safety valve 29” and in combination with brake valve 31 are arranged to aerate and lock and also arranged to deaerate the parking brake connection in a controlled way due to signal being generated by electronic control unit.

C. With respect to page 9 of the Appeal Brief, Appellant argued that Hilberer (US 6,540,308) does not disclose, teach or suggest to incorporate the various components of a compressed air processing unit (including control valve arrangements) inside a common housing”. Hilberer disclosed, as shown in fig. 3, valve 8a and parking brake system FBA formed a valve arrangement. At least one valve 8a of the valve arrangement is within a common housing. The valve 8a together with safety valve 12 and in combination with parking brake system FBA are arranged to aerate and lock and also arranged to deaerate the parking brake connection due to signal being generated by electronic control unit.

Art Unit: 3683

(11) Related Proceeding(s) Appendix

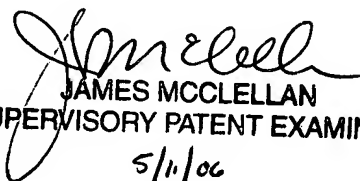
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

msy M. Sy

May 11, 2006





JAMES MCCLELLAN
SUPERVISORY PATENT EXAMINER
5/11/06

Conferees:

James McClellan (SPE)

Robert Siconolfi

Mariano Sy

ENGLISH TRANSLATION FOR DE 196 38 226 C1

Translator

Application No.: 97 114 894.5 (EP 0 831 383)

Applicant: Haldex Brake Products GmbH & Co. KG
D-69123 Heidelberg, Eppelheimer Str. 76

The invention refers to the use of a signal being generated by a control unit of a controller and shows a controller also and an installation of compressed air production for such a vehicle.

A controller of the type described above is known from DE 44 21 575 A1. A multi-circuit control valve with its overflow valves and an air-drier are provided in the housing of this electronic unloader. The housing of the unloader has a chamber to receive the compressed air of a source of compressed air. The chamber is connectable with the atmosphere via a controlled outlet valve during its open position. Each overflow valve comprises a control and monitoring unit branching off downstream the check valve of the unloader. Each control and monitoring unit has a check valve also closing in opposite direction of the flow, an operation unit for controllable opening of a passing through valve and a pressure sensor to detect the pressure downstream the controlled check valve. Thus, a number of operation modes are possible.

A further unloader is known from DE 35 06 178 A1. The unloader comprises a housing having an inlet and an outlet connected with the atmosphere. A line starting from a chamber is connected finally with a reservoir in known manner. A check valve is arranged between the chamber and a flow through connection. The check valve opens in the direction to the flow through connection and prevents a backflow. Upstream the check valve an outlet valve is provided, the outlet valve having a unit to alternatively open and to close, the unit including a solenoid valve in form of a 3/2 directional solenoid valve. A pressure sensor is provided being a pressure voltage transformer detecting the pressure downstream the check valve, i.e. in the flow through connection. The outlet valve is designed as a quick release

valve having a clamped membrane. The solenoid valve is controlled by an electrical control unit to switch between the pumping state and the running idle of the compressor. Thus, an electronic unloader is provided having all the functions of mechanically designed unloaders.

The object of the invention is to provide a controller and/or an installation of compressed air production making it possible to prevent the release of the emergency and parking braking circuit of a vehicle during a pressure in the reservoirs assigned to the service braking circuits not sufficient to actuate a minimum of deceleration of the vehicle. In other words, the reservoirs of the service braking circuits should be filled first with compressed air of a pressure guaranteeing a minimum of deceleration of the vehicle during braking action prior to release the emergency and parking brake and to start driving the vehicle.

In accordance with the invention that is achieved by the use of a signal to shut off a supply line to a hand brake valve, the signal being generated by a control unit with respect to pressures in the reservoirs assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle. The invention is directed to a controller for installation of compressed air production of claim 2 and to an installation for compressed air production of claim 6.

The invention starts from the idea to generate a signal by the aim of the control unit, the signal being present during a pressure of compressed air in the reservoirs assigned to the service braking circuits which is lower than a fixed or choosable value or the pressure of the compressed air. When this signal is present, the supply line to the hand brake valve is shut off, making the release of the emergency and parking brake impossible, so that the vehicle cannot be moved, i.e. the

driving cannot be started. All this happens during the pumping stage of the unloader. The circuit may be designed to generate the signal only when the unloader is in the pumping stage. Thus, it is guaranteed that the filling action of the reservoirs of the single circuits is continued without having the possibility to move the vehicle. Consequently, the pressure in the reservoirs will increase. Since the pressure in each of the reservoirs will be watched already, it is easily possible to detect when the pressure overrides the fixed or adjusted pressure value. At this moment the supply line is free to let the air through so that any actuation of the hand brake valve then will cause an operation of the hand brake valve and a release of the emergency and parking brake.

This invention can be used for example with respect to a controller as a singular unit. On the other hand the invention can be used with respect to an installation of compressed air production, i.e. an installation having a number of singular elements being connected with corresponding electrical and pneumatic lines.

Such a controller for installation of compressed air production for vehicles comprises a housing having an inlet, a chamber, an outlet, an unloader for the compressed air, the unloader being connectable with the atmosphere by a controlled outlet valve when in its opening position, a check valve downstream the unloader, an integrated multi-circuit control valve having a number of control and monitoring units branching off downstream the check valve of the unloader, a common control unit to actuate the controlled outlet valve of the unloader and the control and monitoring units, and a regenerable air-drier between the unloader and the downstream positioned check valve, the air-drier being controlled by the common control unit and a regeneration solenoid valve with a downstream positioned check valve for purpose of controlling the air-drier. This controller

is characterized by the control and monitoring unit being assigned to the hand brake valve. The controller additionally has a closing position to shut off a supply line to the hand brake valve. It has a pneumatically controllable piston to reach the closing position. The regeneration solenoid valve is connected with the control and monitoring unit assigned to the hand brake valve via a control line. The control unit is designed to generate a signal with respect to pressures in the reservoirs assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle. The regeneration solenoid valve is controllable by the signal during the pumping condition of the unloader. Thus, the invention is used as a singular unit, i.e. the controller. The control and monitoring unit of the circuit assigned to the emergency and parking braking system is designed slightly different compared with the other units so that additionally a shut off position of the supply line is possible. This shut off position is active, if the pressure in the reservoirs assigned to the service braking circuits, as described above, is too low to guarantee a minimum of a deceleration of the vehicle during braking operation. It would be too dangerous in this stage to start a driving action with the vehicle. The possibility of driving is hindered because the emergency and parking brake cannot be released at this stage by the hand brake valve.

The control line may be connected with the line connecting the regeneration solenoid valve and the air-drier upstream a check valve having a throttle positioned downstream. Thus, the regeneration solenoid valve is excited by the signal causing two functions. If the unloader is running idle during normal filling stage of the reservoirs, the regeneration solenoid valve causes the regeneration of the air-drier, i.e. compressed air out of the reservoirs will flow backwardly through the air-drier to the atmosphere taking with it the humidity in the air-drier. On the

other hand, the signal generated by the control unit will be transmitted to the regeneration solenoid valve, if the unloader is in the pumping condition and the chosen pressure value is not reaches jet in the reservoirs. In this case a regeneration cannot be caused because the unloader is in the pumping stage. But it is possible also to use the regeneration solenoid valve only to fulfil a second function, namely for the closing position in the supply line to the hand brake valve.

Doing this, it is possible to branch off a further line from the control and monitoring unit assigned to the hand brake valve, giving connection with a reservoir assigned to a further circuit. The control and monitoring unit comprises two outlet connections and one inlet connection. The control unit can be operated electrically or pneumatically. A 3/2 directional solenoid valve can be provided as the regeneration solenoid valve, the 3/2 directional solenoid valve having a check valve positioned downstream for regeneration purpose. Such a valve can be used to fulfil both of the described functions.

On the other hand, the invention can be used with respect to an installation of compressed air production of a vehicle having the features describes in the first part of claim 6. The installation is characterized in that a separation valve, especially a solenoid valve, is provided in a supply line. The supply line connects the control and monitoring unit assigned to the hand brake valve with the hand brake valve. The control unit of the controller is designed to generate a signal with respect to pressures in the reservoirs assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle. The regeneration solenoid valve is controllable by the signal during the pumping condition of the unloader.

There is the possibility that a reservoir is provided in the supply line to the hand brake valve. The separation valve is arranged in the supply line between the reservoir and the hand brake valve. In this connection it is important to prevent the flow of compressed air out of the reservoir to the hand brake valve.

The invention is further explained and described with reference to the drawings showing preferred embodiments. It is shown in :

Fig. 1 a diagram of a controller as a singular unit being part of a system according to the invention,

Fig. 2 a diagram of a system for compressed air production showing the essential parts of the invention.

The embodiment shown in Fig. 1 illustrates the elements of an unloader 2, a multi-circuit protection valve 3, and an air-drier 4 being integrated in a common housing 1. The housing 1 and the unloader 2 respectively comprises an inlet 5. A line 6 starting from a compressor 7 is connected with the inlet 5. The inlet 5 is connected to a chamber to which a controlled outlet valve 8 is connected leading to an outlet 9 connected with the atmosphere. The controlled outlet valve 8 has a valve body cooperating with an rim of the housing 1 and being supported on a spring 10. A piston having a tappet is assigned to the valve body. A pressure chamber is provided for the piston, the pressure chamber being connected with a line 11, in which a 3/2-directional solenoid valve 12 is provided.

A line 13 connects the unloader 2 with the air-drier 4. Line 13 extends further to a check valve 14 and further into a chamber (not shown) from which the branching off of the compressed air

to the several elements starts. A line 15 is in connection with a regeneration solenoid valve 16 which is also supplied with compressed air from the same chamber.

The regeneration solenoid valve 16 has the two positions illustrated and is controlled via the electric cable 17 by an electric control unit 18. The regeneration solenoid valve 16 has a venting 19. A line 20 is provided connecting the solenoid valve 16 with a check valve 21 and a throttle 22 to the air-drier 4. This line 20 serves for regeneration of the air-drier 4. The line 20 terminates at the line 13 between the check valve 14 and the air-drier 4.

The multi-circuit control valve 3 comprises a number of pressure safety valves 23, 23', 23'', 23''' and pressure sensors 24, 24', 24'' and 24'''. A further pressure sensor 25 serves to detect the pressure in a common chamber immediately downstream the check valve 14, the common chamber having connection to all elements. It is evident that the pressure sensors 24 and 25 are connected with the electric control unit 18. Each control and monitoring unit 30 comprises a pressure safety valve 23 and a pressure sensor 24. Thus, a first control and monitoring unit 30 is provided and assigned to the first service braking circuit. Consequently, a downstream line 26 gives connection to a reservoir 27. The pressure sensor 24 is located in this line 26. A branching line 28 connects the line 26 via a safety valve 29 with the atmosphere. Analogously, a control and monitoring unit 30' is provided, being assigned to the second service braking circuit. The individual parts of the control and monitoring unit 30' are designed in the same manner as described with reference to the control and monitoring unit 30.

The control and monitoring unit 30'' is designed slightly different. The unit is assigned to the hand brake valve 31 and thus to an emergency braking circuit. For this purpose, a line

32 having a check valve 33 gives connection to the hand brake valve 31 and to the emergency spring cylinder of the emergency and parking braking circuit. The pressure safety valve 23" of the control and monitoring unit 30" has the three indicated positions and is electrically controlled. It further has a pneumatic control connection 35 for a cooperating piston. The control connection 35 is connected with the line 20 downstream the regeneration solenoid valve 16 via a control line 36. Thus, it is possible, to control the control and monitoring unit 30" by the regeneration solenoid valve 16 and to shut off the supply line 32 so that an actuation of the hand brake valve 31 cannot cause a release of the emergency and parking braking circuit.

On the other hand, the control and monitoring unit 30" is assigned to a further circuit. Thus, a line 26" gives connection to the reservoir 27".

The control and monitoring unit 30''' is assigned to a fourth circuit and analogously assigned and connected. The supply of compressed air by the compressor 7 during pumping condition of the unloader 2 is effected to the control and monitoring units 30, 30', 30" and 30''' over the check valve 14 and a line 37. A line 38 branches off from this chamber supplying the pressure safety valves 23, 23', 23" and 23''' with compressed air from the compressor 7. The line 38 further gives connection to an overflow valve 39 and a reservoir 40 positioned downstream.

The controller of Fig. 1 with its housing 1 allows the following operation with respect to the connected parts :

If the vehicle is in the parking position and the emergency and parking braking circuit is effective, the emergency spring cylinders are vented via the hand brake valve 31. In the reservoirs 27, 27', 27" and 27''' is a low pressure detected by the pressure sensors 24, 24', 24" and 24'''. Corresponding

signals are transferred to the electronic control unit 18 when the engine of the vehicle is started. Consequently, the electronic control unit 18 of the unloader 2 shifts the compressor into the pumping condition, in which the reservoirs 27, 27', 27" and 27''' are subsequently filled with compressed air under raising pressures. If the pressures in the reservoirs 27 and 27' detected by the pressure sensors 24 and 24' are too low to guarantee a minimum of deceleration of the vehicle during a braking action, the electric control unit 18 shifts the regeneration solenoid valve 16 by a signal in line 17 into the other position, so that compressed air can flow via the control line 36 to the control connection 35 of the control and monitoring unit 30" and thus a position is reached, in which the supply line 32 is shut off. It is possible to actuate the hand brake valve 31. However, since compressed air to release the emergency spring cylinders 34 cannot be supplied, the emergency and parking braking circuit is effective and the vehicle remains in parking condition. Thus, it is prevented to move the vehicle in this moment and to start driving. The controlling of the regeneration solenoid valve 16 at this stage cannot cause a regeneration cycle in the air-drier 4, because the unloader 2 is in pumping condition. A regeneration can only be effected during the running idle of the compressor. Thus, the pumping condition will be continued till a minimum of pressure is in the reservoirs 27 and 27' guaranteeing a minimum of deceleration of the vehicle under braking action. In this moment, the electric control unit 18 shifts the regeneration solenoid valve 16 into the other position, so that compressed air can flow to the hand brake valve 31 via the supply line 32. An actuation of the hand brake valve 31 results in a release of the emergency and parking braking circuit. The vehicle can be moved. The pressure in the reservoirs 27, 27', 27" and 27''' will increase further till the maximum of pressure is reached. Then, the unloader 2 shifts the compressor to run idle.

The system for compressed air production illustrated in Fig. 2 has a control unit with a housing 1 also. This control unit is designed similar to the control unit illustrated in Fig. 1. However, the control and monitoring unit 30" is analogously designed with the other control and monitoring units 30, 30' and 30'''. Control line 36 is not needed and the pressure safety valve 23" has no pneumatic control connection 35. The supply line 32 gives connection to the reservoir 27" and to the hand brake valve 31 via a separation valve 41. An electric line 42 connects the electric control unit 18 and the separation valve 42. The shut off position of the supply line 32 is not caused by the regeneration valve 16, but by a signal transmitted to the separation valve 41 via a line 42. The function is analogous.

LIST OF REFERENCE NUMERALS

- | | |
|----------------------------------|----------------------------------|
| 1 - housing | 11 - line |
| 2 - unloader | 12 - solenoid valve |
| 3 - multi-circuit control valve | 13 - line |
| 4 - air-drier | 14 - check valve |
| 5 - inlet | 15 - line |
| 6 - line | 16 - regeneration solenoid valve |
| 7 - compressor | 17 - cable |
| 8 - outlet valve | 18 - control unit |
| 9 - outlet | 19 - venting |
| 10 - spring | 20 - line |
| 21 - check valve | 31 - hand brake valve |
| 22 - throttle | 32 - supply line |
| 23 - pressure safety valve | 33 - check valve |
| 24 - pressure sensor | 34 - emergency spring cylinder |
| 25 - pressure sensor | 35 - control connection |
| 26 - line | 36 - control line |
| 27 - reservoir | 37 - line |
| 28 - branching line | 38 - line |
| 29 - safety valve | 39 - overflow valve |
| 30 - control and monitoring unit | 40 - reservoir |
| 41 - separation valve | |
| 42 - line | |

CLAIMS:

1. Use of a signal to shut off a supply line (32) to a hand brake valve (31), the signal being generated by a control unit (18) with respect to pressures in the reservoirs (27, 27') assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle.
2. Controller for installation of compressed air production for vehicles comprising a housing (1) having an inlet (5), a chamber, an outlet (9), an unloader (2) for the compressed air, the unloader being connectable with the atmosphere by a controlled outlet valve (8) when in its opening position, a check valve (14) downstream the unloader (2), an integrated multi-circuit control valve (3) having a number of control and monitoring units (30, 30', 30" etc.) branching off downstream the check valve (14) of the unloader (2), a common control unit (18) to actuate the controlled outlet valve (8) of the unloader (2) and the control and monitoring units (30, 30' etc.), and a regenerable air-drier (4) between the unloader (2) and the downstream positioned check valve (14); the air-drier (4) being controlled by the common control unit (18) and a regeneration solenoid valve (16) with a downstream positioned check valve (21) for purpose of controlling the air-drier (4), wherein the control and monitoring unit (30'') being assigned to the hand brake valve (31) in addition has a closing position to shut off a supply line (32) to the hand brake valve (31) and has a pneumatically controllable piston to reach the closing position, the regeneration solenoid valve (16) is connected with the control and monitoring unit (30'') assigned to the hand brake valve via a control line (36), and the control unit (18) is designed to generate a signal with respect to pressures in the reservoirs (27, 27') assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle, the regeneration solenoid valve (16)

being controllable by the signal during the pumping condition of the unloader (2).

3. The controller of claim 2, wherein the control line (36) is connected with the line connecting the regeneration solenoid valve (16) and the air-drier (4) upstream a check valve (21) having a throttle (22) positioned downstream.

4. The controller of claims 2 or 3, wherein a further line (26'') branches off from the control and monitoring unit (30'') being assigned to the hand brake valve (31), the line being connected with a reservoir (27'') assigned to a further circuit.

5. The controller of claim 2, wherein a 3/2 directional solenoid valve is provided as the regeneration solenoid valve (16), the 3/2 directional solenoid valve having a check valve (21) positioned downstream for regeneration purpose.

6. Installation for compressed air production for a vehicle comprising a housing (1) having an inlet (5), a chamber, an outlet (9), an unloader (2) for the compressed air, the unloader being connectable with the atmosphere by a controlled outlet valve (8) when in its opening position, a check valve (14) downstream the unloader (2), an integrated multi-circuit control valve (3) having a number of control and monitoring units (30, 30', 30" etc.) branching off downstream the check valve (14) of the unloader (2), a common control unit (18) to actuate the controlled outlet valve (8) of the unloader (2) and the control and monitoring units (30, 30' etc.), and a regenerable air-drier (4) between the unloader (2) and the downstream positioned check valve (14), the air-drier (4) being controlled by the common control unit (18) and a regeneration solenoid valve (16) with a downstream positioned check valve (21) for purpose of controlling the air-drier (4), wherein a separation valve (41), especially a solenoid valve, is provided in a supply line (32),

the supply line connecting the control and monitoring unit (30") assigned to the hand brake valve (31) with the hand brake valve (31), and the control unit (18) of the controller is designed to generate a signal with respect to pressures in the reservoirs (27, 27') assigned to the service braking circuits, the pressures being too low to guarantee a minimum of deceleration of the vehicle, the regeneration solenoid valve (16) being controllable by the signal during the pumping condition of the unloader (2).

7. The installation of claim 6, wherein a reservoir (27") is provided in the supply line (32) to the hand brake valve (31) and the separation valve (41) is arranged in the supply line (32) between the reservoir (27") and the hand brake valve (31).